

RATING FACTOR 3.C.: CONTROL BOARD OPERATIONS, MANUAL CONTROL

1. Examiner comment on 303 form p. 21 of 32, related to Scenario 7, Event 3

A. FACTUAL SEQUENCE OF EVENTS

- During the simulator scenario, event 3 was initiated at time 07:54:54 with a TE-0130 failure low.
- As a result of this failure, TV-0130 will throttle shut, raising the actual Letdown Heat Exchanger outlet temperature.
- At time 07:55:46, examiner noted that Carla appeared to diagnose the failure correctly. The examiner also noted that [REDACTED] opened the ARPs, and Carla did not open any ARPs.
- At time 08:00:30, [REDACTED] referenced CVCS system P&IDs.
- At time 08:01:54, Carla pointed to the controller, looked at [REDACTED], and stated, “the only thing we can do is call C&T to get the TE fixed.”
- At time 08:02:45, [REDACTED] directed Carla to take manual control of TIC-0130 and monitor VCT outlet temperature.
- When Carla initially attempted to manipulate the controller, she incorrectly pressed the “up arrow” button instead of the “down arrow” button.
- Shortly thereafter, [REDACTED] told Carla that the controller raises and lowers temperature, it does not open and close the valve.
- At time 08:05:00, the LETDOWN TEMP DEMIN DIVERT alarm cleared.
- During this sequence of events (approximately 10 minutes of simulator runtime), Carla was physically located in front of the panel with the TE-0130 controller (slightly to the “left” of the main OATC control station). As noted in a previous comment (related to scenario 7, event 1, rating factor 3.a.), P. Capehart and M. Bates held a discussion pertaining to the long duration of time that elapsed without Carla walking back to the OATC station to monitor key reactor plant parameters.

During post-scenario follow-up questions, the examiner asked what procedure guidance was used to manually control TE-130? Carla looked through the LETDOWN HX OUTLET HI TEMP ARP. During this discussion, Carla stated that she had initially pressed the “up” button, and then subsequently pressed the “down” button. The examiner asked “walk me through the diagnosis and the plant response?” Carla stated that demand goes down, causing flow through the heat exchanger to lower, it’s a reverse-acting controller.

B. EXAMINER EVALUATION AND COMMENTS

The examiner downgraded the applicant in rating factor 3.c, which is related to the ability to take manual control of automatic functions. This competency is different from manual rod control or PORV valve operation (other errors placed in different rating factors) in that a plant parameter is controlled in automatic under normal circumstances.

The examiner considered that there were elements of rating factor 1.b demonstrated during this event. Rating factor 1.b. relates to the applicant's "...actions demonstrate an UNDERSTANDING of how the PLANT, SYSTEMS, and COMPONENTS OPERATE AND INTERACT (including set points, interlocks, and automatic actions)?" More specifically, during this event, Carla specifically stated, "there is nothing else we can do but call C&T...", demonstrating a lack of understanding that the controller could be operated in a manual mode. Furthermore, the SRO was then required to instruct the applicant in the correct operation of the controller, which demonstrated that the applicant had a deficiency in understanding how the controller operated.